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			KATAYAMA ET AL	Cited for related Interest	345/159	<u> </u>	1
1			FURTADO ET AL	Footnote 100 Special Interes		<u> </u>	1
			VOLK ET AL		395/327		
			BRINSON ET AL	Footnote 98 Special Interest]
					273/85]
			KONAMI CO.	Cited for related Interest	463/3]
	6007423			Cited for related Interest	463/6]
	5184120	2/2/1993		Cited for related Interest	340/870]
	5555894			Cited for related Interest	600/595]
	5673066	9/30/1997	TODA ET AL.	Cited for related Interest	345/157		1
	5853324	12/29/1998	KAMI ET AL	Footnote 99 Special Interest	462/2		1
	6146278	11/14/2000	KOBAYASHI		463/53		1
	6031516	2/29/2000	LEIPER	Cited for related Interest	345/629		1
	6041068	3/21/2000	ROSENGREN ET AL	Footnote 101 - Special Interes	370/538		1
		10/25/1994		Footnote 106 - Special Interes			1
			ROSENBERG ETAL		345/157		1
	6225976		YATES ET AL		345/156		1
			KAKU ET AL	Footnote 103 - Special Interes			1
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Information Disclosure Statement By Applicant - Foreign Patent Documents -

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			First Named Inventor	Brad A. Armstrong	APR 2 8
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Many	EP0302158	11-13-1987		Cited for related Interest	
	EP0830881	08-07-1998		Cited for related Interest	
	EP0626634	11-30-1994	MATSUSHITA ELEC.	Cited for related Interest	
	EP0403054	12-19-1990		Cited for related Interest	
	JP11009837	04-30-1999	TAITO CORP.	Cited for related Interest	
	EP0952555	10-27-1999	SAIKAWA ET AL	Cited for related Interest	
	EP0852961	07-15-1998	KONAMI CO. LTD	Cited for related Interest	
	WO0152042	07-19-2001		Cited for related Interest	
		02-28-1995		Footnote 112 Special In	terest .
	TW288636	10-11-1996	PRIMAX ELECTRONIC	Cited for related Interest	I
	TW369431	09-11-1999	SONY COMPUTER ENT.	Cited for related Interest	
	JP10-258181	09-29-1999	ALPS ELECTRONIC CO.	Cited for related Interest	T T

Footnote 113 -- Special Interest

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NON PATENT LITERATURE DOCUMENTS AND OTHER REFERENCES -

PE 103	NON PATENT	LITERATURE	DOCUMEN	NIS AND O	INCK KEFE	KENCES -		
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	IBM TECHNICAL	Cited for	 	 	 	 	 	1
clin	DISCLOSURE BULLETIN, vol. 21, no. 9, Feb. 1, 1979, pages 3845-3846, Anonymous author, Title: "Keyboard Device	related interest					·	
·	For Upper And Lower Case Keying Without Shifting". The Present Applicant could not locate a copy of this IBM disclosure but lists							
	the data because it was cited as an "X" reference in a European Patent Office Search report on a related invention filed for by another Applicant.	,			·			
Chr	Jim Boyce et al, Inside	Cited for related interest						
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U.S. Palent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid CMB control number

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number			
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First Named Inventor	Brad	Α.	Armstrong
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(Um)	_	5200597		Eastman	1993	generally	
1		<u>5207426</u>		Inoue	1993	•	
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		5315204		Park	1994	H	11
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		<u>5365494</u>	,	Lynch ·	1994	11	11
		5376913		Pine	1994	11	11
		<u>5396235</u>		Maeshima	1995	11	11
		<u>5440237</u>		Brown	1995	11	- 11
	_	<u>5457478</u>		Frank	1995	11	*1
		5640566		Victor	1997	H	11
		<u>5670955</u>		Thorne	1997	11	11
	_	<u>5673237</u>		Blank	1997	H	11
	4	5675329		Barker	1997	*1	11
	_	<u>5689285</u>		Asher	1997	ei ei	11
		5764219		Rutledge	1998	11	11
		<u>5778404</u>		Capps	1998	fr	11
		5790102		Nassima	1998	**	11
	<u> </u>	5847305		Yoshikawa	1998	н	- 11

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مدننك			031484		Gurndig	1982	generally	211
+			543890		Thomson-Brant	1987	#	
			113920		Alps Electric	1983	11	11
		GP 2	058462		Shin-Etsu Polym	er 1981	. н	
		wo 9	957630		Schneider	1999	13	" -
			37760 J	^	Mitsumi Electri	c 1993	11	,, -
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Ulm	/	5565891		Armstrong	1996	generally		
		5589828		Armstrong	1996	10-	11	
		5999084	,	Armstrong	1999	10	**	
		6102802		Armstrong	2000	44	1)	
		6135886		Armstrong	2000	11	tı	
\Box		6198473		Armstrong	2001	67	f1	
		6208271		Armstrong	2001	11	6)	
		6222525		Armstrong	2001	91	ti .	
		3611068		Fujita	1971	11	ti	
		3806471		Mitbbell	1974	11	13	
		3952173	-	Tsuji	1976	11	11	
		3988556		Hyodo	1976	0.0	10	
		4224602		Anderson	1980	, "	"	
		4313113		Thornburg	1982	n	11	
		4315238		Eventoff	1982	71	11	
		4552360		Bromley	1985	**	11	
		4673919	\cdot	Kataoka	1987	11	ft.	
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Ass	/	wo9532776	Namco	1995	generally	al	ī
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First Named Inventor	Brad A. Armstrong
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the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. Complete If Known Substitute for form 1449A/PTO **Application Number** INFORMATION DISCLOSURE Filing Date STATEMENT BY APPLICANT First Named Inventor TRADEV Brad A Armstrong Group Art Unit (use as many sheets as necessary) **Examiner Name** Sheet 01 Attorney Docket Number

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Chin		Vol. 20 No. 5 Oct. 1977 S.F. KAMBIC, IBM Technical Disclosure Bulletin, (general)	у
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Um		IBM TECHNICAL DISCLOSURE BULLETIN pp230-235 Feb. 1990 Mouse Ball-Actuating Device With Force And Tactile	
Mu	/	RESEARCH DISCLOSURE November 1987 28373 Joystick with Tactile Feedback (generally all relevant)	
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Min	us-5510812	1996	O'Mara	Generally all
-+-	us- 4469330	1984	Asher	generally all
	US- 4246452	1.981	Chandler	generally all
	us. 5565891	1996	Armstrong	generally all
	us D355901	1995	Bradley	generally all
	us 4555960	1985	King	generally all
	us- 4924216	1990	Leung	generally all
- -	US- 4933670	1990	Wislocki	generally all
+	US 5065146	1991	Garrett	generally all
╅╌╂╴	us 5128671	1992	Thomas, Jr.	generally all
	US 5237311	1993	Wislocki	generally all
	US- 5293158	1994	Soma	generally all
╌┼╌┼╌	us 5298919	1994	Chang	generally all
- 	US 5329276	1994	Hirabayashi	generally all
- - -	US 2430284	1947	Evers	generally all
	Us. 3921443	1972	Starita et al	generally all
 	US 4099409	1975	Hill et al	generally all
 	Us. 4216467	1978	Edmond	generally all
 	US- 4297542	1980	Colston	generally all
	100 4747347	1981	Shumway	11 11

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				First Named Inventor	Brad A.	Armstrong	
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444		us4348142	1982	Figour	generally all
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44		us4414537	1983	Grimes	Benerally all
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\perp		us4670743	1987	Zemke	11
		us4684089	1987	van der Lely	77
		us4811608	1989	Hilton	
		US4855704	1989	Betz	11
		us-4910503	1990	Broadsky	11
		us-4935728	1990	Kley	
		US-5128671	1992	Thomas, Jr.	
	_ 1	US-5142931	1992	Menahem	<u> </u>
		Us-5168221	1992	Houston	
		U8-5189355	1993	Larkins et al	11
		US-5252952	1993	Frank et al	11 11
		us 5329276	1994	Hirabayashi	11 11
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First Named Inventor	Brad	Α.	Armstrong	_
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		5294121	CHIANG	1994	11	11
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I = I		5391083	ROEBUCK ET AL	1995	11	11
I = I		5139439	SHIE	1992	11	11
		6040821	FRANZ ET AL	2000	11	ri .
		5396225	OKADA ET AL	1995	11	11
		5999808	LADUE	1999	li .	11
		4858930	SATO	1989	11	#1
		5670988	TICKLE	1997	11	11
		5184830	OKADA ET AL	1993	ti .	**
		5552799	HASHIGUCHI	1996	11	11
		5355352	KOBAYASHI ET AL	1994	**	11
\prod		5564560	MINELLI ET AL	1996	11	81
		5923317	SAYLER ET AL	1999	11	11

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Application Number						
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First Named Inventor	Brad A. Armstrong					
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		6319		NISHIUMI ET AL	1999	11	н
		5995		JACOBS ET AL	1991	-	11
		5875		MASON	1979	11	11
		0621		OOTA	1983	11	11
		9894		SUDO ET AL	2001	11	11
		6981		THORNER ET AL	1997	11	11
	64	2294	1	THORNER ET AL	2002	11	71
		3138	6	BRANDENBURG ET A		1)	11
	58	8950	7	ENGLE ET AL	1999	()	11
		2694		KOBACHI ET AL	2001	11	11
		8928		ASHER	1997	11	0
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09/893,292 **Application Number** 06/26/01 Filing Date

First Named Inventor Brad A. Armstrong

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